CENTERS FOR DISEASE CONTROL

# MNNR

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# **Trends in Diabetes Mellitus Mortality**

In 1985, diabetes mellitus (DM) was the seventh leading cause of death in the United States (1) and the 13th leading cause of years of potential life lost (YPLL) before age 65 (2), accounting for 128,229 (1.1%) of all YPLL. However, because these statistics are based on underlying cause of death, they understate the overall impact of DM on mortality. Specifically, diabetes is selected as the underlying cause on approximately one quarter of the death certificates on which it appears in any field (see Figure 1 on p. 779) (3) and is recorded on only about half of the certificates for persons who have the disease at the time of death (3). Thus, DM contributes to a much larger number of deaths than it directly causes.

National mortality rates for 1970–1985 were analyzed to evaluate trends for diabetes as an underlying cause of death and for total DM-related mortality.\* National Center for Health Statistics (NCHS) numbers of resident DM deaths (eighth and ninth revision International Classification of Diseases [ICD] rubric 250) were used for numerators. (The comparability ratio for the revision from ICD-8 to ICD-9 for ICD rubric 250 is 0.9991 [CI 0.98–1.02] [4]; because the ratio is near unity, no adjustment for comparability was made.) Numbers of deaths for which DM was listed anywhere on the death certificate were used to compute total DM-related mortality rates. The rates were age-adjusted by the direct method, using the estimated U.S. resident population in 1980 as the standard.

Mortality rates based on the U.S. resident population provide one measure of the public health impact of DM. To determine diabetic persons' risks of dying from their disease, mortality rates were also calculated for the U.S. population known to have DM. The DM prevalence estimates from 1976, 1980, and 1984 (5) (available from the National Health Interview Survey) were multiplied by the corresponding estimated U.S. resident population (6,7) to estimate the number of persons known to have DM for these years. This latter estimate served as the denominator in calculating mortality rates for persons known to have DM.

\*The underlying cause of death is selected according to standard criteria (including order) that determine which cause or contributing factor listed on the death certificate takes precedence over others that may be listed. Mortality statistics are usually based on underlying cause of death. However, multiple cause of death data available from NCHS allows for mortality statistics based on all mentions of a condition on death certificates.

From 1970 through 1985, age-adjusted rates declined for both DM as an underlying cause of death (Figure 1) and total DM-related mortality (Figure 2). The greatest decline occurred between 1970 and 1979, when the average annual decrease in rates for DM as an underlying cause of death was 3.7% (Figure 1) and for total DM-related mortality, 3.0% (Figure 2); between 1979 and 1985, the average annual changes in rates were –0.2% (Figure 1) and +0.4% (Figure 2). Crude rates also declined for both methods of coding DM mortality during 1970–1985.

For 1980–1985, average age-specific mortality rates for DM, both underlying cause and total DM-related, increased with age (Figure 3). Nearly all DM deaths occurred after age 44. For all age groups after age 44, total DM-related mortality rates were 3.3 to 4.2 times higher than those for DM as an underlying cause of death.

Race-specific age-adjusted rates for total DM-related deaths (U.S. residents used as denominator) were highest for blacks (Figure 4). From 1970 to 1979, rates for all four race/sex groups declined. Between 1979 and 1985, however, rates for white males, black males, and black females increased annually an average of 0.6%, 2.1%, and 1.6%, respectively; rates for white females did not change.

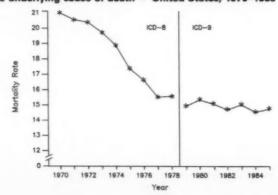
In contrast to the results for mortality rates among U.S. residents (Figure 4), the highest rates of total DM-related mortality for persons known to have diabetes occurred for white males (Figure 5). Although rates for all four race/sex groups decreased during the period, they increased slightly for white males after 1980.

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Editorial Note: Analyses of national death certificate data indicate that age-adjusted mortality rates for DM have decreased from 1970 to 1985 and that most of the decrease occurred between 1970 and 1979. These analyses (Figure 3) also demonstrate that rates based on underlying cause of death, the usual measure of DM mortality, reflected only about one quarter of the deaths to which DM may have contributed.

The decline in DM-associated mortality may reflect 1) changes in the death certification process, e.g., persons who complete death certificates may be less likely to list diabetes where it would be selected as the underlying or contributory cause of

FIGURE 1. Age-adjusted mortality rates per 100,000 residents for diabetes mellitus coded as the underlying cause of death — United States, 1970–1985



death, and 2) improved treatment for DM and DM-related conditions from 1970 to 1985, resulting in longer survival for persons with diabetes ( $\theta$ ).

Age-specific mortality rates indicate that DM mortality increases with age and may reflect the prevalence of diabetes in older populations (9). For example, in 1980, 40% of all persons with known diabetes were aged ≥65 years; 84% were aged ≥45 years.

Analyses of trends among race/sex groups for total DM-related mortality indicate that among U.S. residents, blacks have the highest mortality rates, possibly reflecting a greater prevalence of diabetes among blacks. Among persons known to have diabetes, white males have higher mortality rates than blacks. Further investigation of these patterns should address the effect of sampling variability and confounding (e.g., age).

FIGURE 2. Age-adjusted mortality rates per 100,000 residents for total diabetes mellitus-related deaths — United States, 1970–1985

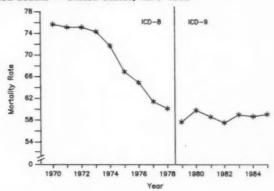
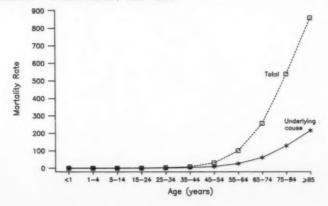


FIGURE 3. Average age-specific mortality rates per 100,000 residents for diabetes mellitus coded as the underlying cause of death and for total diabetes mellitus-related deaths — United States, 1980–1985



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   Hyattsville, Maryland: US Department of Health and Human Services, Public Health Service,
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FIGURE 4. Age-adjusted mortality rates per 100,000 residents for total diabetes mellitus-related deaths, by race and sex — United States, 1970–1985

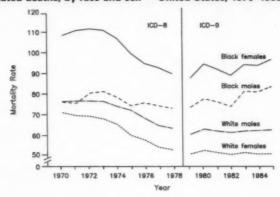
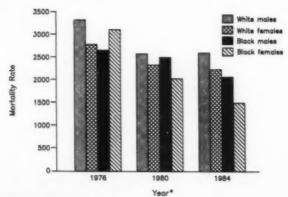


FIGURE 5. Age-adjusted mortality rates per 100,000 residents with known diabetes for total diabetes mellitus-related deaths, by race and sex — United States, 1976, 1980, 1984



Welfare, Public Health Service, 1980; DHEW publication no. (PHS)80-1120. (Monthly vital statistics report; vol 28, no. 11 suppl).

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## **Current Trends**

# **Operational Criteria for Determining Suicide**

Suicide is the eighth leading cause of death among Americans (1). In 1986, suicide accounted for 30,904 deaths and for 939,104 years of potential life lost before age 65. In the United States, a coroner or medical examiner usually determines whether a death is a suicide and records that decision on the death certificate. Laws guiding these decisions vary by state and sometimes by county, and guidelines for certification decisions may be inconsistent and vague.

No explicit criteria exist to assist in determining whether a death is a suicide. Therefore, several factors, e.g., uncertainty about what evidence is necessary and pressures from families or communities, may influence a coroner or medical examiner not to certify a specific death as a suicide. Because the extent to which suicides are underreported or misclassified is unknown, it has not been possible to estimate precisely the number of suicides (2–6), identify risk factors, or plan and evaluate preventive interventions.

To address these problems, a working group representing coroners, medical examiners, statisticians, and public health agencies\* developed operational criteria to assist coroners and medical examiners in determining suicide (7). Following are the working group's findings.

#### CRITERIA FOR DETERMINING SUICIDE

**Self-Inflicted:** There is evidence that death was self-inflicted. This may be determined by pathologic (autopsy), toxicologic, investigatory, and psychologic evidence and by statements of the decedent or witnesses.

Intent: There is evidence (explicit and/or implicit) that, at the time of injury, the decedent intended to kill himself/herself or wished to die and that the decedent understood the probable consequences of his/her actions. This evidence may include:

<sup>\*</sup>The working group comprised representatives from the American Academy of Forensic Sciences, American Association of Suicidology, Association of Vital Records and Health Statistics, International Association of Coroners and Medical Examiners, National Association of Counties, National Association of Medical Examiners, National Center for Health Statistics, and CDC.

## Suicide - Continued

- 1. Explicit verbal or nonverbal expression of intent to kill self;
- 2. Implicit or indirect evidence of intent to die, such as
  - preparations for death inappropriate to or unexpected in the context of the decedent's life.
  - expression of farewell or the desire to die or an acknowledgment of impending death.
  - expression of hopelessness,
  - · expression of great emotional or physical pain or distress,
  - · effort to procure or learn about means of death or to rehearse fatal behavior,
  - · precautions to avoid rescue,
  - · evidence that decedent recognized high potential lethality of means of death,
  - previous suicide attempt,
  - · previous suicide threat,
  - · stressful events or significant losses (actual or threatened), or
  - · serious depression or mental disorder.

(Continued on page 779)

## TABLE I. Summary - cases of specified notifiable diseases, United States

	50	th Week End	ing	Cumulative, 50th Week Ending			
Disease	Dec. 17, 1988	Dec. 19, 1987	Median 1983-1987	Dec. 17, 1988	Dec. 19, 1987	Median 1983-1987	
Acquired Immunodeficiency Syndrome (A Aseptic meningitis	(IDS) 310 131	U* 143	176 179	29,146 6,620	20,446 10,804	7,653 10,576	
Encephalitis: Primary (arthropod-borne	17	20	20	761	1 254	1,254	
& unspec) Post-infectious	1/	20	3	751 114	1,254	1,254	
Gonorrhea: Civilian	11,879	12,154	17,502	666,573	735,369	853.899	
Military	244	371	371	11,225	15,602	19.805	
Hepatitis: Type A	643	513	466	25,476	23,865	22,043	
Type B	456	545	545	21,777	24,542	24,805	
Non A. Non B	36 57 29	67 49 20 15	67	2,402	2.841	3,379	
Unspecified	57	49	116	2,289	2,972	4,973	
Legionellosis	29	20	15	955	912	734	
Laprosy	2	15	7	172	205	233	
Mataria	8	59	10	945	894	959	
Measles: Total	39 35	8	11	2,865	3,575	2,726	
Indigenous	38	8	10	2,543	3,153	2,290	
imported	1	-	2	322	422	308	
Meningococcal infections	36 84	61	47	2,654	2,789	2,564	
Mumps	84	175	139	4,504	12,233	3,237	
Pertuesis	74	44	44	2,857	2,425	2,425	
Rubella (German measles)	5	- 1	- 4	210	333	605	
Syphilis (Primary & Secondary): Civilian	807	612	612	38,865	33,964	26,896	
Taxia Charles and Military	3	8	8	151 329	159 320	163 353	
Toxic Shock syndrome	449	615	597	20,432	20,880	20,880	
Tularemia	1449	010	397	174	189	189	
Typhoid Fever	1 3	11		370	346	364	
Typhus fever, tick-borne (RMSF)	2	7	3	609	595	740	
Rabies, animal	45	45	70	4.109	4,461	5,179	

## TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1988		Cum. 1988
Anthrax		Leptospirosis (Hawaii 7)	51
Botulism: Foodborne	26 36	Plague	14
Infant (Pa. 1, Ohio 1)	36	Poliomyelitis, Paralytic	1
Other (Ohio 2)	1 6	Psittacosis (Md. 1)	93
Brucellosis (Mich. 1, Ala. 1, Tex. 1, Calif. 1)	74	Rabies, human	
Cholara	7	Teterius	48
Congenital rubella syndrome	4	Trichinosis (Upstate N.Y. 1, Ariz. 1, Calif. 1)	44
Congenital syphilis, ages < 1 year	426		
Diphtheria (Ga. 1)	1		

<sup>\*</sup>Because AIDS cases are not received weekly from all reporting areas, comparison of weekly figures may be misleading.
\*One of the 39 reported cases for this week was imported from a foreign country or can be directly traceable to a known internationally imported cases within two generations.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending December 17, 1988 and December 19, 1987 (50th Week)

		Aseptic	e Encephalitie		Gono		H	epatitis (\	Viral), by	type	Legionei-	
Reporting Area	AIDS	Menin- gitis	Primary	Post-in- fectious	(Civi	lian)	A	В	NA,NB	Unapeci- fied	losis	Laprosy
	Cum. 1986	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1987	Cum. 1988	Cum. 1988	Cum. 1988	Cum. 1966	Cum. 1988	Cum. 1988
UNITED STATES	29,146	6,620	751	114	666,573	735,369	25,476	21,777	2,402	2,289	965	172
NEW ENGLAND	1,265	401	30	4	21,185	22,821	832	1,186	113	90	63	15
Maine	27	21	3		384	676	18	57	5	2	4	
N.H.	38	40	1	3	267	392	45	69	11	4	5	
Vt. Mass.	711	160	9	1	7,246	8,006	16 380	56 687	71	61	5 36	14
R.I.	83	94			1,955	2,062	84	82	11	4	3	1
Conn.	396	57	8	*	11,222	11,477	289	236	8	15		-
MID. ATLANTIC	9,710	725	54	4	104,643	116,011	1,935	3,112	184	321	211	8
Upstate N.Y. N.Y. City	1,304 5,254	384	35	3	15,565	16,950 62,031	727 362	743 1,303	72 19	20	80 45	7
N.J.	2,340	61	11		15,310	15,882	437	703	62	44	40	1
Pa.	812	140			31,018	21,148	409	363	31	17	46	
E.N. CENTRAL	2,082	1,114	202	13	113,217	112,691	1,712	2,292	216	128	246	8
Ohio	408	430	63	3	25,279	25,309	318	533	39	20	96	*
Ind.	972	134	28 47	10	34,245	9,020 32,253	157 621	496	19 76	31 35	27	7
Mich.	457	402	47	10	36,132	36,296	390	641	56	39	61	
Wis.	105	49	17		8,889	9,813	226	273	26	3	41	1
W.N. CENTRAL	708	261	60	12	28,714	29,656	1,370	1,004	101	36	74	1
Minn.	156	30	18	4	3,805	4,342	105	137	24	4	4	*
lowa	39	36	9	3	2,150	2,925	49 798	82	13	3	18	
Mo. N. Dak.	364	108	4		16,736 182	15,909 276	798	580	44	18	23	
S. Dak.	7	18	5	2	462	596	29	6	3		14	
Nebr.	45	13	13	2	1,416	1,917	46	41	2	-	5	
Kens.	93	49	10	1	3,963	3,691	334	144	12	5	9	1
S. ATLANTIC	5,137	1,421	104	41	187,565	192,438	2,373	4,541	370	343	144	1
Del. Md.	63 552	202	11	3	2,961 19,509	3,273 22,232	47 287	136 691	40	28	16 22	i
D.C.	475	202	11	1	14,072	12,757	18	47	40	28	1	
Va.	343	205	32	4	13,820	14,045	356	312	73	227	11	
W. Va.	20	37	22	-	1,293	1,354	15	69	5	4	-	-
N.C.	274	166	21		26,665	29,257	377	815	91	:	31	*
S.C. Ge.	171 763	21 164	1	1 2	15,064 35,632	14,192 34,345	40 596	518	12	6 7	27	
Fis.	2,476	561	13	30	58,549	60,983	637	1,294	122	66	13	
E.S. CENTRAL	730	457	63		52,865	55,259	728	1,399	176	14	48	2
Ky.	92	158	22	1	5,359	5,566	471	270	62	2	20	
Tenn.	324 199	53 186	16		18,543 15,840	19,386	164 56	646 346	41 62	10	14	2
Ale. Miss.	124	60	25	2 5	13,123	17,276 13,031	37	137	11	2	6	
W.S. CENTRAL	2,374	816	88	3	71,938	83,124	3,234	2,067	207	552	38	40
Ark.	80	17	6		7,106	9,300	341	113	10	17	6	
La.	358	120	24	1	14,216	13,194	163	380	25	17	7	8
Okla. Tex.	1,809	802	50	2	6,793 43,824	8,958 51,672	484 2,246	1,384	130	36 482	17	32
MOUNTAIN	845	235	29	4	14,270	19,064	3,382	1,552	245	175	48	1
Mont.	16	5		-	393	545	44	54	10	4	2	
Idaho	11	3	*	*	315	652	128	110		4	2	
Wyo.	299	75	3	-	195 3,126	407	231	12	64	80	3	1
Colo. N. Mex.	59	24	3	1	1,406	2,063	536	225	20	1	4	
Ariz.	273	84	14	1	5,235	6,471	1,910	598		57	20	
Utah	61	25	4 5	2	519	633 3,949	300 228	132		20	4 5	
Nev.	120	17		26	3,081	-			-	630	93	96
PACIFIC Wash.	6,286 362	1,190	121	4	72,176 6,785		2,283	4,634	196	74	24	7
Oreg.	176			-	3,128	3,792	1,356	568	91	22	6	1
Calif.	5,626	1,055	108	21	60,684	89,517		3,097		516	61	73
Alaska Hawaii	19	25 110	2		1,025			56		13	3	14
Guern	1				143					2	1	5
P.R.	1,230	79	4	1	1,268	1,862	53		41	41		3
V.I.	32	-			422			7	2		*	
Amer. Samoa					77	82	7	2		5		2

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending December 17, 1988 and December 19, 1987 (50th Week)

	Malaria		Meas	iss (Rui	haola)		Menin-								
Reporting Area		Indig	engus	Impo	orted*	Total	gococeal infections	Mu	imps		Pertuesi			Rubella	•
	Cum. 1988	1986	Cum. 1988	1988	Cum. 1988	Cum. 1987	Cum. 1866	1988	Cum. 1988	1998	Cum. 1988	Cum. 1987	1988	Cum. 1988	Cum 1987
UNITED STATES	945	38	2,543	1	322	3,575	2,884	84	4,804	74	2,857	2,425		210	333
NEW ENGLAND	73		83		54	282	231	1	129		178	171			2
Maine N.H.	3		67	*	44	183	10		108		24	34		:	1
Vt.	6					28	18	1	108		47	43			
Mass. R.i.	36	*	2	*	2	00	101		7		80	54		3	1
Conn.	19		7			22	21 57	:	10		17 23	31		1	
MID. ATLANTIC	165	1	912		50	588	292	6	360	2	302	298	1	15	12
Upstate N.Y.	41	1	20		18	43	138		99	1	207	165		2	10
N.Y. City N.J.	11	-	317		12	406	68	3	104		9	19		7	1
Pa.	24		529		14	40	23	3	100	1	17	92	1	4 2	1
E.N. CENTRAL	50		141		108	389	376	13	896	2	258	285		31	42
Ohio Ind.	11		57		83	5	142		130	-	49	74		1	
86.	3		56		16	200	30 76	4 7	82 322	1	74 46	20		26	31
Mich.	23		26		5	29	88	1	225	1	38	51		4	9
Wis.	9	-		•	4	146	41	1	138		51	102	*	-	2
W.N. CENTRAL Minn.	18		11	1	3	230	97 21	9	253		142	145		2	2
lowa	2				1	. 39	21		36	-	63 34	14 58			1
Mo. N. Dak.	6		1		1	189	37	-	42	-	22	39			
S. Dak.					-	1	5		1	-	11	15			
Nebr.	1	-	*			-	12		11			1		-	
Kans.	3			-	*	1	21	9	163		7	15		2	1
S. ATLANTIC Del.	123	*	415	*	22	177	451	21	748	3	253	311		18	19
Md.	22		12		5	10	54 54	10	175	2	7 48	5 19		1	2
D.C.	12		-	*	-	1	10	3	285	-	1				1
Va. W. Va.	20		237		2	1	55	3	139	-	24 10	56 39		11	1
N.C.	16	-		*	6	6	67	-	51	1	67	122		1	1
S.C. Ga.	10	-				10	37 70	2	8		1				
Fla.	33	-	160		10	115	148	3	32 38		37 58	23 48		2	9
E.S. CENTRAL	21	-	60		-	8	245	3	449	3	106	48		2	3
Ky. Tenn.	1	*	35	*	-		57		213	1	13	2		*	2
Ala.	10					4	131	2	217	1	30 58	15	*	2	1
Miss.	10		34	*		4	16	N	N		4	7			
W.S. CENTRAL	83		20		4	448	180	10	871	3	230	312		24	12
Ark.	12	-	-		1	*	21	2	138	3	38	13	*	4	2
Oklis.	10		8		-	4	23		315 197	-	20 62	171		1	6
Tex.	57	*	12		3	444	87	8	221		119	78		19	4
MOUNTAIN Mont.	44	13	160	1	34	497	81	6	220	58	870	224		6	25
idaho	5 2	13	48		31	128	2 8		7	2	335	80			8
Wyo.				*		2	-	3	7		2	5			1
Colo. N. Mex.	15		112	*	1	318	13	Ň	33	6	36	69		2	
Ariz.	13		-	-		36	21	2	N 143	49	53 413	13			5
Utah Nev.	4 2		*	11	1	1	15		7		27	12		3	10
PACIFIC	368	24	700		-	3	2	1	21		1			1	
Wash.	25	24	732		47	966 47	701	15	579 62	3	512 115	651 98	4	103	216
Oreg.	16	-	6	*	2	103	45	N	N		50	83			2
Calif. Ale: ka	313	24	715		37	801	565	13	475	2	280	228	4	75	140
Hawaii	11	-	3			4	17	-	13		80	236		28	70
Guam					1	2			3		-			1	1
P.R. V.L	2		231	*		771	12		10		15	20		3	3
Amer. Samos						1	3	-	34	-	*				1
C.N.M.I.	1						1		2						

<sup>\*</sup>For messies only, imported cases includes both out-of-state and international importations.

N: Not notifiable U: Unavailable <sup>†</sup>International <sup>§</sup>Out-of-state

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending December 17, 1988 and December 19, 1987 (50th Week)

Reporting Area	Syphilis (Primary &		Toxic- shock Syndrome	Tubero	ulosis	Tule- remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
neporting Area	Cum. 1988	Cum. 1987	Cum. 1988	Cum. 1988	Cum. 1987	Cum. 1988	Cum. 1998	Cum. 1988	Cum. 1988
UNITED STATES	38,865	33,984	329	20,432	20,860	174	370	809	4,109
NEW ENGLAND	1,168	620	24	528	641	4	37	12	16
Maine N.H.	12	3	5	29 11	28 18	:			1 6
Vt.	3	4	2	6	16		1		
Mass. R.I.	428 33	297 12	10	302 39	358 61	3	21	7	
Conn.	687	312	3	139	180	1	8	3	9
MID. ATLANTIC	9,105	6,260	48	4,228	3,808		73	19	479
Upstate N.Y. N.Y. City	598 6,180	255 4,847	22 6	531 2,306	1,931	:	15 45	11	44
N.J.	980	697	3	726	694		11	ż	15
Pa.	1,347	836	17 47	685 2,255	739 2,315	1	34	34	420
E.N. CENTRAL	1,146 108	106	31	424	431		7	22	144
Ind.	51	57 421	1 2	243	250		2	2 7	29
III. Mich.	520 433	194	13	490	1,037	1	19	2	31 35
Wis.	34	59	-	99	93		2	1	44
W.N. CENTRAL	259	177	45	504 85	583 115	78	6	93	456
Minn. Iowa	18 26	23 27	8 7	58	39	3	4	2	128 13
Mo.	153	79	11	241	314	48	2	57	22
N. Dak. S. Dak.	1	11	3 5	15 33	13 24	16		7	105 129
Nebr.	28	16	4	16	25	3 7	:	1	21
Kans.	33	20	9	56	53	7		26	38
S. ATLANTIC Del.	13,939	11,613 67	21	4,384 42	4,464	2	42	199	1,419
Md.	693	610	3	418	387	2	3	22	317
D.C. Va.	693 420	399 312		174 392	152 413	2	12	17	13 349
W. Va.	37	13	:	68	98		1	2	98
N.C. S.C.	811 714	702 668	9	525 470	600 451	-	2	107 23	123
Ga.	2,498	1,621		723	807	1	8	24	290
Fia.	7,973	7,221	3	1,572	1,517		14	3	164
E.S. CENTRAL Ky.	2,030 65	1,836	24 10	1,678 354	1,874 413	11 5	3	92 30	287 118
Tenn.	895	730	11	513	601	5		39	69
Ala. Miss.	567 503	484 595	2	501 310	529 331	1	1	11 12	93
W.S. CENTRAL	4,318	4,284	34	2,598	2,412	54	8	144	526
Ark.	247	251	2	302	289	35		31	86
La. Okla.	139	775 175	11	311 235	312 233	16	4	2 93	11
Tex.	3,084	3,083	21	1,750	1,578	3	4	18	396
MOUNTAIN	801	670	35	561	617	- 11	11	12	358
Mont. idaho	3 4	9	5	31 22	18		1	6 2	202
Wyo.	. 1	3		5	2	2	:	3	38
Colo. N. Mex.	106 47	123 54	3 2	74 91	150 98	5 2	3	1	26
Ariz.	163	284	16	248	261	1	6		44
Utah Nev.	17 461	25 166	9	29 61	25 33	1		:	16
PACIFIC	6,099	7,659	51	3,698	4,106		156	4	423
Wash.	228	165	9	226	243	1	13	1	
Oreg. Calif.	301 5.527	7,182	40	150 3,113	128 3,483	1 4	130	1 2	391
Alaska	15	4		49	61	2	1		2
Hewali	28	18	1	160	191	•	5		
Guam P.R.	661	2 854	:	249	303		5	:	7:
V.I.	2	10		6	2				
Amer. Samos C.N.M.I.	i		:	5 25	11		1	:	

U: Unavailable

## TABLE IV. Deaths in 121 U.S. cities,\* week ending December 17, 1988 (50th Week)

							PAI			All Cau	sees, B	y Age	(Years)		Pôl**
Reporting Area	All Ages	>65	45-64	25-44	1-24	<1	Total	Reporting Area	All Ages	>65	45-64	25-44	1-24	<1	Tota
NEW ENGLAND	722	500	136	58	15	12	58	S. ATLANTIC	1,362	826	300	117	60	57	72
Boston, Mass.	179	116	42	13	6	2	24	Atlanta, Ga.	184	108	38	21	8	9	8
Bridgeport, Conn.	43	27	12	3	1		2	Baltimore, Md.	312	208	67	21	8	8	14
ambridge, Mass.	19	15	3	1		-	1	Charlotte, N.C.	92	56	17	8	7	4	10
all River, Mass.	36	25	8	3		-	1	Jacksonville, Fla.	102	56	30	5	7	3	1
lertford, Conn. owell, Mass.	63	40 25	13	6	2	2	2	Miami, Fla.	159	81	42	15	13	8	
ynn, Mass.	18	14	2	2		1	2	Norfolk, Va.	70	41	14	8	2	5	1
iew Bedford, Mass.	32	24	6	1	1	-	3	Richmond, Va.	77	49	16	5	3	4	
lew Haven, Conn.	51	33	9	3	3	3	-	Savannah, Ga.	50	34	9	5		2	
rovidence, R.I.S	58	45	10	3		3	2	St. Petersburg, Fla.	78	63	9	.1	1	4	
omerville, Mass.	14	11	2	1				Tampa, Fla.	84	47	17	11	4	4	
pringfield, Mass.	60	42	11	6	1		6	Washington, D.C.	127	63	36	15	7	6	
Vaterbury, Conn.	47	33	4	7	1	1	4	Wilmington, Del.	27	20	5	2		*	
Vorcester, Mass.	63	50	8	2		3	9	E.S. CENTRAL	904	800	184	63	27	30	5
							-	Birmingham, Ala.	126	79	27	6	4	10	_
AID. ATLANTIC	2,500	1,708	533	229	58	70	130	Chattanooga, Tenn.	85	58	16	8	2	1	
Ubany, N.Y.	65	39	16	7	1	2	3	Knoxville, Tenn.	96	67	17	8	3	1	
Allentown, Pa.	19	17	2	-			2	Louisville, Ky.	148	87	32	14	5	10	
Juffalo, N.Y.	120	78	29	8	2	2	7	Memphis, Tenn.	177	118	40	12	7		1
Camden, N.J.	38	23	9	4	1		1	Mobile, Ala.	72	49	17	2	2	2	
Elizabeth, N.J.	27	19	4		-	4	1	Montgomery, Ala.	58	45		2	1	2	
rie, Pa.t	47	35	10	-	1	1	3	Nashville, Tenn.	142	97	27	11	3	4	1
Jersey City, N.J.	62	36	18	5	-	1	2	W.S. CENTRAL	1,853	1,137	423	189	64	40	6
N.Y. City, N.Y.	1,461	941	295	158	36	31	61	Austin, Tex.	57	36	11	6	04	4	
Newark, N.J.	67		15	8	4	3	3	Baton Rouge, La.	44	27	10	3	1	3	
aterson, N.J.	37	25	3	6	1	2	7	Corpus Christi, Tex.9		37	10	1		3	
hiladelphia, Pa.	194	132	40	8	6	8	12	Dallas, Tex.	216	123	49	27	12	. 5	
ittsburgh, Pa.1	77	47	22	4	1	3	2	El Paso, Tex.	68	48	13	3	2	2	
leading, Pa.	25	19	3	1	1	1	5	Fort Worth, Tex	96	55		13	7	- 1	
Rochester, N.Y.	102	73	20	5		4	7	Houston Text	734	436		89	24	16	1
Schenectady, N.Y. Scranton, Pa.†	37	26	3	2 2	1	1	1	Little Rock, Ark.	72	45		3	4		,
Syracuse, N.Y.	92	28 63	18	6	1	4	10	New Orleans, La.	166	103		17	3	3	
Frenton, N.J.	50	29	15	4	1	1	10	San Antonio, Tex.	191	117	53	13	6	2	
Utica, N.Y.	27	24	1	i		1	1	Shreveport, Ls.	40	23		4	2		
Yonkers, N.Y.	20	15	5		-		2	Tulsa, Okla.	121	87		10	3	2	1
E.N. CENTRAL	2,448	1,617	492	181	75	83	120	MOUNTAIN	687	436	146	60	16	29	2
Akron, Ohio	56	41	11	1	3	63	2	Albuquerque, N. Mer		52		7	4	3	
Canton, Ohio	30	23	6	1			3	Colo. Springs, Colo.	34	19		5	1	1	
Chicago IIIs	564	362	125	45	10	22	16	Denver, Colo.	139	81	33	17	3	5	
Cincinnati, Ohio	162	111	30	9	3	9	20	Las Vegas, Nev.	105	64		4	1	5	
Cleveland, Ohio	154	91	36	20	2	5	9	Ogden, Utah	24	18			1	2	
Columbus, Ohio	122	71	26	12	7	6	1	Phoenix, Ariz.	150	92		17	5	9	
Dayton, Ohio	140	100		9	1	3	7	Pueblo, Colo.	19	14		2		1	
Detroit, Mich.	273	172		30	8	9	10	Salt Lake City, Utah	41	31		2		1	
Evansville, Ind.	86	74			2	-	7	Tucson, Ariz.	94	65	20	6	1	2	
Fort Wayne, Ind.	48	37	2	5	3	1	3	PACIFIC	1,995	1,321	389	179	50	49	
Gary, Ind.	72	29		13	2	3	6	Berkeley, Calif.	15	1,321		1/9	90	49	11
Grand Rapids, Mich.		50		1	6	6	3	Fresno, Calif.	95	57		10	3	2	
Indianapolis, Ind.	171	100		15	5	5	5	Glendale, Calif.	26	20			3	2	
Madison, Wis.	46	30		1	3	3	5	Honolulu, Hawaii	64	50		2	1		
Milwaukan, Wis.	125	88		6	5	5	6	Long Beach, Calif.	91	70		3	1	-	
Peoria, III.	45	33	5	3	1	3	3	Los Appeles Celif						2	2
Rockford, III.	53	36		1	3	1	1	Los Angeles Calif. Oakland, Calif.§	560 71	340 48		58	15	11	1
South Bend, Ind.	50	33		1	2		6	Pasadena, Calif.	35	25		4	1	3	
Toledo, Ohio	111	81		4	8	2	7	Portland, Oreg.	140	103		5	7	4	
Youngstown, Ohio	58	46		4	1	-		Sacramento, Calif.	149	91		11	5	5	1
W.N. CENTRAL	791	561	141	45		94	9*	San Diego, Calif.	140	88		18	1	5	
	63	48			23	21	31	San Francisco, Calif.	163	103		21	6	4	
Des Moines, Iowa	26			4	1		*	San Jose, Calif.	193	136		14	3	6	1
Duluth, Minn.		20				1		Seattle, Wash.	155	114		11	5	3	,
Kansas City, Kans.	110	20		2	1		40	Spokane, Wash.	56	39		2	2	4	
Kansas City, Mo.		77	19	9	3	2	11	Tacoma, Wash.	42	26		4	2	-	
Lincoln, Nebr.	28	23		44	2		3		-						
Minnespolis, Minn.	192	136		11	5	8	7	TOTAL	13,3611	8,706	2,744	1,121	388	391	67
Omaha, Nebr.		59	17	4	3	4	6								
St. Louis, Mo.	142	96		11	4	3									
St. Paul, Minn.	51	37		2	2	2	2								
Wichita, Kans.§	60	44	11	2	2	- 1	2	1							

<sup>\*</sup>Mortality data in this table are voluntarily reported from 121 cities in the United states, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included. \*Pneumonia and influenza. †Because of changes in reporting methods in these 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.
†Total includes unknown ages.
\$Data not available. Figures are estimates based on average of past available 4 weeks.

Suicide - Continued

Reported by: LE Davidson, MD, Atlanta, Georgia. AL Berman, Washington Psychological Center; D Murray, National Association of Counties; D Jobes, George Washington Univ, Washington, DC. H Buzbee, Peoria County Coroner's Office, Peoria, Illinois. G Gantner, St. Louis Univ Medical Center, St. Louis, Missouri. B Moore-Lewis, Washington Dept of Social and Health Svcs. DH Mills, Los Angeles, California. Registration Methods Br, Div of Vital Statistics, National Center for Health Statistics; Intentional Injury Section, Epidemiology Br, Div of Injury Epidemiology and Control, Center for Environmental Health and Injury Control, CDC.

Editorial Note: For each death certificate filed in the United States, the certifier must indicate, in addition to the cause of death, the manner of death as "natural," "accident," "suicide," "homicide," or "could not be determined" (Figure 1) (8). For suspected suicide or homicide, state laws usually require a medical examiner or coroner to complete the death certificate. Because suicide is particularly subject to inaccurate determination, the incidence of suicide may be underestimated by 10%–50% (2–6).

Death certificates are the primary data source for U.S. mortality statistics, and public health priorities are influenced considerably by the perceived magnitude of problems. Thus, underreporting of suicide can affect research, prevention, and intervention efforts regarding this problem. More accurate reporting may improve understanding of the risk factors for suicide and lead to more effective prevention strategies.

The validity and reliability of certifications of suicide are decreased for several reasons (9–11). The determination of suicide requires that the death be established as both self-inflicted and intentional. For most certifiers, establishing intentionality is the most difficult criterion. A coroner or medical examiner who suspects suicide may be reluctant to impose social stigma, guilt, and loss of insurance benefits on the victim's family. Since many certifiers lack explicit criteria for assessing suicidal intent, they might search for a narrower range of evidence concerning intent (10). Thus, a certifier might conclude that a death was not a suicide because information proving intent was not collected. However, absence of evidence of intent is not evidence of absence of intent.

Some certifiers require a suicide note to certify a death as suicide. Yet, only about one third of persons who commit suicide leave such notes (11). Forensic science experts also differ on the proper certification of deaths for psychotic, very young, or alcohol- or drug-intoxicated persons (12–17).

FIGURE 1. Cause of Death section of U.S. Standard Certificate of Death

1		m, or complications that caused the dea flore. List prity and cause on each line.	off. Do not enter the mode of dying	g, such as cardiac or requiredary	Approximate Interval Setween Orset and Death					
	desses or condition	DUE TO 108 45 A CONSIDERICE DR:								
ON OTHER MOR	Sequencially list conditions. If any, leading to immediate cause. Error UNDERLYWO CAMER Change or your	DUE TO GOT AS A CONSEQUENCE	3 00							
	that initiated events resulting in death! LAST	QUE TO IOR AS A COMORQUEN	DE GIP):							
	PART S. Ditter against the conditions	profitating to death but not resulting in t	to underlying cause given in Part I.	DBs. WAS AN AUTOPSY PERFORMED? (Yes or red	AVAILABLE PRIOR TO COMPLETION OF CAUSE OF ENDTER! THE IS NOT					
	28. NAMED OF CRATH    Name   Pending     Amoder   Investigation	Sibs. DATE OF NUMBER Sibs. THEE		NA. DESCRINE HOW MUNITY OCCU	AMED .					
	Shando Could not be	96s. PLACE OF INJUSY At huma, farm building, etc. (Specify)	s, street, factory, office 364, LDC	CATION (Street and Number or Rure	l Rouse Humber, City or Yours, State					

## Suicide - Continued

The new operational criteria for determining suicide should improve reporting by helping to standardize the information collected and incorporated into the manner of death determination. The certifier is more likely to identify a suicide correctly when the case file contains objective information regarding intent to die.

Suggestions or inquiries regarding the criteria should be addressed to Operational Criteria for Determination of Suicide Working Group, c/o Division of Injury Epidemiology and Control, Center for Environmental Health and Injury Control, CDC.

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# **Hypothermia Prevention**

From 1976 through 1985, 7450 deaths were caused by exposure to cold\* in the United States (Figure 1). Of health effects associated with cold exposure, hypothermia—defined as a core body temperature of ≤35 C (≤95 F)—is the most commonly fatal syndrome. Persons ≥60 years of age are particularly susceptible to hypothermia and account for more than half of all deaths (1). Younger persons subjected to

<sup>\*</sup>Deaths attributed to excessive cold (ICD code E901) were analyzed using mortality data tapes for 1978–1985 from the National Center for Health Statistics.

Hypothermia - Continued

overwhelming cold stress are also vulnerable (2). Although deaths attributable to hypothermia occur infrequently in children, infants <1 year of age are at relatively high risk. Rates of death from hypothermia are generally higher in males than in females, but these differences are less substantial in children and the elderly (3).

Persons with hypothyroidism are at increased risk for hypothermia (4). In addition, a variety of drugs, principally sedative-hypnotics, may predispose users to hypothermia; ethanol and neuroleptic medications particularly increase susceptibility to cold (2).

As the body temperature of a cold-exposed person decreases, impaired consciousness, confusion, or disorientation may occur. Because mental status is altered, a mildly hypothermic person may fail to take appropriate corrective measures to lessen exposure. In response to the decline in core temperature, vasoconstriction (causing pallor) and shivering occur. However, shivering decreases markedly in severe hypothermia because thermoregulation becomes impaired. Severely hypothermic persons lose consciousness and develop shallow respirations. Ventricular fibrillation and death may follow (2).

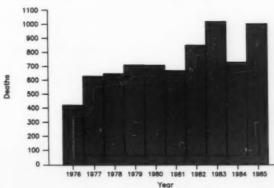
Reported by: Health Studies Br, Div of Environmental Hazards and Health Effects, Center for Environmental Health and Injury Control, CDC.

**Editorial Note:** This preliminary study of mortality data suggests a trend toward increased incidence of hypothermia. Although age-adjusted rates are required to properly evaluate the hypothesis that mortality due to effects of cold is increasing, the crude numbers of deaths (Figure 1) strongly suggest such a trend.

Hypothermia prevention programs should focus on persons particularly susceptible to hypothermia and those likely to be subjected to unusual cold stress. Persons caring for the elderly should be alerted to hypothermia's symptoms and signs, and elderly persons living alone should be visited frequently. Since adequate caloric intake is important in preventing hypothermia, programs designed to improve nutrition in the elderly may also be helpful. Programs that ensure home heating for the elderly may also help prevent hypothermia.

Younger persons likely to be subjected to cold stress (e.g., skiers and hikers) should be educated concerning the need for adequate clothing and the importance of

FIGURE 1. Deaths attributable to excessive cold exposure — United States, 1976-1985



Hypothermia - Continued

abstaining from alcohol use during prolonged cold exposure. Shelter should be offered to homeless persons who would otherwise sleep outdoors on cold winter nights.

MMWR

Persons using medications (particularly neuroleptic medications) that are likely to increase susceptibility to the cold should be advised by their physicians regarding their increased vulnerability to cold stress.

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## Notices to Readers

## Fourth National Environmental Health Conference

On June 20–23, 1989, the Center for Environmental Health and Injury Control, CDC; the Agency for Toxic Substances and Disease Registry (ATSDR); and the Association of State and Territorial Health Officials will cosponsor the Fourth National Environmental Health Conference. The conference will be held in San Antonio, Texas, and is directed toward federal, state, and local health and environment officials, physicians, and the environmental community.

The theme of the 1989 conference is "Environmental Issues: Today's Challenge for the Future." The conference will address environmental problems that have the greatest importance to public health, review topical scientific findings, and discuss prevention strategies. Plenary sessions will cover radon; medical, municipal, and hazardous waste; air pollution; lead in the environment; and dioxin. Twenty workshops will be held on topics of interest to states, academic institutions, and federal agencies, including health assessments at National Priority List (NPL) and Resource Conservation and Recovery Act (RCRA) sites, emergency responding, radiation, birth defects, risk communication, and indoor air pollution and respiratory disease.

For further information, call CDC at (404) 488-4700 or (404) 488-4682 or ATSDR at (404) 488-4881.

# Combined Issues of MMWR

The December 30, 1988, issue of MMWR will not be published. The next issue will be Volume 37, Numbers 51 and 52, dated January 6, 1989, and will include the tables on notifiable diseases and deaths for the weeks ending December 24 and December 31.

## **Current Trends**

# Update: Influenza - United States, 1988-89 Season

The table below provides a summary of surveillance measures of influenza activity in the United States for the weeks ending November 26 and December 3, 10, and 17. These numbers are provisional and may change if additional cases are reported. Final 1987 data for the last report week listed are also included.

		Repo	ort week e	nding	
		19	188		1987
Reports	Nov 26	Dec 3	Dec 10	20 24 0 2 <sup>†</sup> 0 0 3 3 1 2 6 11	Dec 19
No. states/territories reporting influenza or influenza-like illness*					
Sporadic activity	18	19	20	24	21
Regional activity	0	0	0	2*	3
Widespread activity	0	0	0	0	0
Cumulative no. states/territories reporting culture-confirmed influenza infection					
Influenza A(H3N2)	1	2	3	3	6
Influenza A(H1N1)	0	0	1	2	0
Influenza B	4	4	6	11	2
Sentinel physician reports of patients with influenza-like illness, expressed as					
percentage of total no. patients seen	3.5%	3.7%	4.0%	-	4.3%

<sup>\*</sup>Reported by state and territorial epidemiologists. Three levels of activity are defined:

1) Sporadic—sporadically occurring cases of influenza-like illness or culture-confirmed influenza, with no outbreaks detected; 2) Regional—outbreaks of influenza-like illness or culture-confirmed influenza in counties having a combined population <50% of the state's total population; 3) Widespread—outbreaks of influenza-like illness or culture-confirmed influenza in counties having a combined population ≥50% of the state's total population.

<sup>†</sup>Nebraska and California each reported an outbeak of influenza type B in an elementary school this week.

Reported by WHO Collaborating Laboratories or other U.S. laboratories. Influenza A(H3N2) has been reported from the District of Columbia, New York, and Hawaii. Influenza B has been reported from Arizona, California, Florida, Michigan, Nebraska, New York, Ohio, Oklahoma, Oregon, Tennessee, and Texas. Influenza A(H1N1) has been reported from Hawaii and Wisconsin. A previously reported case of influenza A from Maryland (1) was identified by fluorescent antibody test and has not been confirmed.

<sup>1</sup>Because reporting from sentinel physicians for the week ending December 17 is incomplete, this estimate is not included in this update.

Reported by: Participating state and territorial epidemiologists and state laboratory directors. WHO Collaborating Laboratories. Sentinel Physicians of the American Academy of Family Physicians. Influenza Research Center, Baylor College of Medicine, Houston, Texas. Div of Surveillance and Epidemiologic Studies, Epidemiology Program Office; WHO Collaborating Center for Influenza, Influenza Br, and Epidemiology Office, Div of Viral Diseases, Center for Infectious Diseases. CDC.

#### Reference

1. CDC. Update: influenza - United States, 1988-89 season. MMWR 1988;37:721-2,727.

Erratum: Vol. 37, No. 49

p. 762 In Table IV, the deaths from pneumonia and influenza (P&I) in New York City for the week ending December 10, 1988 (49th week), should have read 66 instead of 255. The total P&I deaths for the Mid-Atlantic region and Total (121 cities) should have read 149 instead of 338 and 694 instead of 883, respectively.



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The data in this report are provisional, based on weekly reports to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday. The editor welcomes accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials. Such reports and any other matters pertaining to editorial or other textual considerations should be addressed to: Editor, Morbidity and Mortality Weekly Report, Centers for Disease Control, Atlanta, Georgia 30333.

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